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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/838,235	04/20/2001	Laurence M. Hubby JR.	10007342-1	9228

7590

08/18/2003

HEWLETT-PACKARD COMPANY
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EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 08/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/838,235

Applicant(s)

HUBBY, LAURENCE M.

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 8-14 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein et al. (Hereinafter referred to as Silverstein1) (U.S. Patent No. 6,339,463) in view of Check III (hereinafter referred to as Check) (U.S. Patent No. 5,463,491).

Silverstein1 discloses a visual image display, comprising: a fiber-optic faceplate (50) having an upper face, a lower face; and a multiplicity of straight optical fibers positioned between the upper face and the lower face of the faceplate (Fig. 6a) wherein longitudinal axes of the optical fibers are parallel to each other and substantially perpendicular to the upper face and the lower face of the faceplate; and wherein each of the fibers collects and projects through the faceplate a plurality of light rays emitted by an ambient light source (60).

Silverstein 1 also discloses a layer of suspended particle device (SPD) (40) positioned underneath the lower face of the faceplate, wherein the particles are capable of absorbing or reflecting the plurality of light rays (col. 2, lines 31-47) and a pair of electrodes (ITO, a transparent conductive layer, col. 5, lines 7-9) positioned in contact with opposite surfaces of the layer of SPD, wherein

orientations of the particles depend on an application of an electric field to the electrodes (col.2, lines 31-47) (Figs. 1-5). Silverstein 1 also discloses a transparent conductive layer (ITO, col. 5, lines 7-9). Silverstein also discloses that transparency and the opaqueness of the SPD layer with the electric field in (Col. 2, lines 31-47).

Silverstein does not explicitly disclose that the particles are suspended in droplets of a liquid light valve suspension nor does he disclose a perimeter seals at both ends of the SPD layer. However, Check in disclosing a light valve, discloses a film with particles suspended in droplets of a liquid light valve suspension. Check discloses a film, a fluid (col. 2, lines 25-26 and col. 15, lines 34-52) and an index matching fluid (col. 19, lines 65-67). Check also discloses perimeter seals (15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the configuration disclosed by Check to the device of Silverstein 1 to improve the frequency response characteristics of the film and to reduce light scatter (col. 2, lines 26-28).

3. Claims 6, 15 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein 1 and Check as applied to claims 1, 11 and 19 above, and further in view of Silverstein et al. (hereinafter referred to as Silverstein 2) (U.S.Patent No. 5,442,467).

Though Silverstein 1 and Check disclose a color display device, neither of them explicitly disclose color filters positioned on a rear substrate. Silverstein 2

on the other hand, in disclosing a liquid crystal display device employing fiberoptic faceplate elements, discloses color filter (34) on a rear substrate (22), which is positioned underneath the Liquid crystal cell (SPD). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the configuration disclosed by Silverstein 2 to minimize or eliminate off-axis viewing problems with direct view color LCD displays, allowing homogeneous, high quality image representation over a broad viewing-angle range (col. 4, lines 59-63).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Silverstein 1 and Check as applied to claim 1 above, and further in view of Hubby Jr. (U.S. Patent No. 5,181,130).

Silverstein 1 discloses that the fiber optic faceplate includes an array of individual optical fibers that are fused and cut and polished to a desired thickness to form a plate (col. 3, lines 5-9), Silverstein 1 does not explicitly disclose the cut dimensions of the fiber-optic faceplate. Hubby Jr. on the other hand, in disclosing a fiber optic faceplate liquid crystal display, discloses a fiber-optic faceplate (619) can be fabricated to a thickness in the range of 0.7 to 5.0 millimeters, preferably about 3.0 millimeters (col. 8, lines 28-30).

Note that the range for the thickness of the faceplate as disclosed by Hubby Jr. overlaps the range of approximately 0.25 to 5.0 mm (asserted in claim 7). Therefore, the range in claim 7 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Silverstein 1 and Check LCD device with the thickness of the faceplate within the range of approximately 0.25 to 5.0mm such that the faceplate appears more brightly illuminated than a conventional device under a wide range of ambient lighting conditions due to the superior light diffusion characteristics of the fiber faceplate (col. 5, lines 50-55).

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Silverstein et al. (U.S. Patent No. 5,959,711).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

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PR

August 5, 2003

T. Chowdhury
T. Chowdhury
Primary Examiner